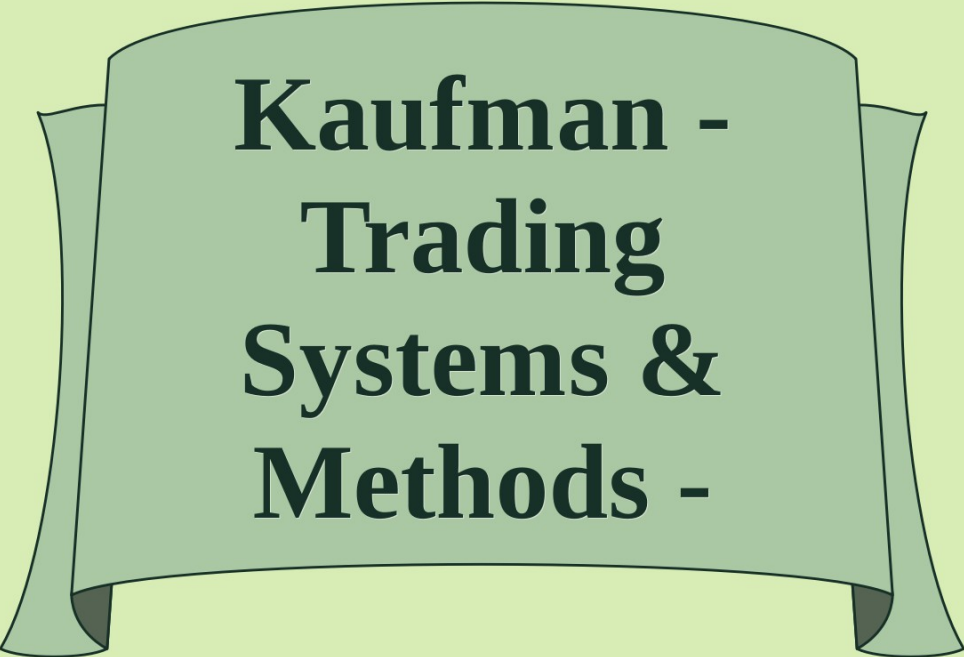




Kaufman - Trading Systems & Methods -

Chap16

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16 DayTrading

A day trade is a position entered and liquidated during a single trading day. The techniques of time of day and daily patterns, discussed in such rigid form in Chapter 15, are put to use by the day trader. Day trading requires extreme discipline, excellent planning, anticipation, and concentration. The need for a fast response to changing situations tends to exaggerate any bad trading habits as in other fields. The shorter the response time, the greater the chance for error. In this chapter, we will extend the idea of class trading to systems and methods that may also be held overnight, but expect to limit the trade to about 24 hours.

To keep mistakes to a minimum, each day's strategy must be planned in advance. It should focus on the most likely situations that might occur based on the nature of the current price movement. There should also be a contingency plan for the extreme unexpected moves in either direction. Making spot decisions during market hours will cause more frequent errors.

Computers have caused the number of day traders who rely on systems to increase, and have created an entire class of screen traders. The steady increase in automated exchanges, led by Germany's DTB and followed by France's conversion of _Matif, is sending a strong message that electronic trading will dominate the future. The availability of intraday price feeds and system development platforms, such as Omega's TradeStation, have greatly increased the number of daytrading participants. Only, 10 years ago the best one could expect was to display standard indicators and moving averages on a realtime price chart. Now you can fully program complex trading strategies that combine more than one market and more than one time frame into a single package and display buy, and sell signals on the screen as well as record a historic log of trades. All of these tools have greatly increased competition among individual and commercial traders.

For the arbitrageur, computers have had an even stronger impact. Sophisticated systems at banks and large financial institutions consolidate data feeds that bring current transactions on every type of interest rate vehicle in every maturity and major currency. Analytic programs can find issues that are outliers and show which combinations (called strips) can produce a riskless profit. For the individual trader, few of these opportunities are available, although they add liquidity to the market. Individuals, however, find it much easier to create spreads of different deliveries within the same market as a spread between two related products. Stock traders can create sector baskets or look for performance differences within a sector. Spread trading and formulated values, such as the energy crack or soybean crush, can be improved using similar displays. Many of the opportunities that now seem so easy to see would previously have been missed. This faster, more systematic response to the market allows traders to improve profits and reduce risk in anydaytrading method.

IMPACT OF TRANSACTION COSTS

Transaction costs are the greatest deterrent to daytrading profits.

The failure to execute near the intended price, plus the commission costs, can remove a large part of potential

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profitability and even turn expected profits into losses. An aspiring day trader has two ways of improving performance: by paying lower commissions and by careful selection of opportunities. Table 161 presents the percentage relationship of moderate transaction costs to the maximum daily price move. The average dollar volatility for the years 1990 through 1996 is shown next to the percentage represented by a \$100 transaction cost. In general, \$ 100 is a modest value for the combination of commissions and slippage, and traders would be very pleased to extract an average profit of onehalf the daily volatility. A practical approach would therefore use twice the percentage effect of a \$100 cost shown here.

Realistically, a day trader would choose the index markets, more volatile currencies, and longterm interest rates as their best opportunity for profits. Com represents the least desirable market because very low volatility leaves more risk than opportunity. Although a \$ 100 transaction cost may seem high for this market, a \$20 commission and slippage equal to a minimum move of $1/4c$, or \$12.50, totaling \$45, would be the smallest possible costs. An occasional fast move in the market, based on unexpected economic news, or large orders entering at one time, must result in a larger number, raising the average.

To keep dollar volatility of a futures contract to a level acceptable by most traders, exchanges have been forced to resize contracts, specifically stock index markets, as overall share values have climbed. During 1997, the S&P was reduced from \$500 per basis point to \$250, and the FTSE100 from £25 to £10. In 1998, the French CAC40 contract was cut to 25% of its previous size. This increases the relative size of transaction costs.

Liquidity

The importance of liquidity is magnified in day trading. Execution slippage of \$ 100, measured as the difference between the system price, or Market Order price, and the actual filled price, will have little impact on a monthlong trade netting \$2,000; however, it will be critical for a day trade with a profit objective of under \$300. The selection of daytrading candidates begins with those markets of greater volume. Whether one contract or 1,000, a

TABLE 16-1 Volatility and Liquidity, U.S. Markets, 1990-1996

<i>Market</i>	<i>\$Volatility</i>	<i>¥\$100</i>
Cotton	540	18.5
Corn	163	61.3
Soybeans	405	24.7
Australian dollar	353	28.3
British pound	848	11.8
Canadian dollar	291	34.4
Deutschemark	703	14.2
Japanese yen	869	11.5
Swiss franc	975	10.3
Gold	311	32.2
High-grade copper	421	23.8
Crude oil	454	22.0
Heating oil	518	19.3
S&P 500	2,154	4.6
NYSE Composite	1,144	8.7
Treasury bills	160	62.5
Treasury notes	568	17.6
Treasury bonds	764	13.1

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thinly traded market produces slippage that will cut sharply into profits. In choosing among index markets that usually offer the greatest volatility and profit potential, you are always safest with the markets that combine the highest volume and highest volatility

Occasionally, markets with light volume show larger price moves than similar markets traded on other exchanges. Traders will be tempted to profit from these moves but Adi consistently find that the execution of an order at the posted price is elusive. The reality of trading these markets is that a Market Order is not advisable due to the thinness of the trading, a Limit Order may not get filled, and a spread is not quoted at anything resembling the apparent price relationships that you see on a quote screen; there is no real way to take advantage of these perceived profits. If an execution succeeds, exiting the position still has the same problems plus some added urgency

Missed Orders

Because the profit objective, projected daily range, holding time, and endofday constraints all put limits on a day trade, there are situations in which the market jumps after a news release and you cannot get filled anywhere close to your intended price. With most of the potential profit gone before you enter the order, it would not be surprising to simply skip that trade. These missed orders, called unables, can add up to a large part of your profits; at the same time they never reduce your losses.

Some markets are prone to more unables. For the energy complex, heated military or political activity in the MidEast can cause a prolonged period of very erratic price movement, resulting in as much as 20% unexecuted trades during a 1month period. If we consider the normal profile of a shortterm trading system as having an average net profit of \$250, an average loss of \$150, and a 50% frequency of profits, we expect a profit of 85.000 for every 100 trades and a reasonable profitto loss ratio of 1.66. If, however, there are 10% unables, that missed opportunity must come from the profits; if the market was moving in the opposite way, you would get all of your positions filled. Then 10% of the profitable trades means 5 trades out of every 100 for a total of \$1,250 missed. This reduces the total profits to \$4,750 and the profit factor to 1.50. It may turn a marginal trading strategy. or one with small profits per trade, from a profit to a loss.

Price Ranges

The average daily range (not the true range) shows the maximum potential for a single daytrading profit. Some markets, such as gold and corn, combine a lack of liquidity with a narrow daily range and are easily disqualified from a day trade opportunity. Eurodollars have extremely high volume but very little movement; therefore, they are also not a good candidate for day trading. When volume is combined with volatility, the world index markets, followed by the currencies and longterm interest rates, are shown to be the best choices. Energy markets represent the next tier, grains remain active, and other markets have far lower volume.

Day traders may find that those markets with traditional daily trading limits present a problem during highvolatility periods. Day trading does best in markets that have wide swings not deterred by exchange limits; a single lockedlimit move can generate a loss that offsets many profitable day trades. High volatility and lockedlimit moves present a contradiction for day trading. Rules that provide for expanding limits have greatly helped reduce the frequency of lockedlimit days; however, traders must always be on guard for this situation.

Estimating Slippage Costs

If you know the cost of slippage, you can do a much better job selecting the markets to trade and have a realistic appraisal of your trading expectations. The factors that make up

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slippage are volatility, overall market volume, current market activity, and the size of the order being placed. Of these items, current market activity is the most difficult to record, because it requires some estimation of volume

as it accumulates throughout the day. While actual volume is not available for most markets, a reasonable approximation can be made using tick volume, the number of price changes during a fixed interval. In general, tick volume is directly proportional to actual trading volume; during periods of greater activity, both contract or share volume will increase along with the number of price changes. If you have carefully recorded the order price, execution price, volatility (daily high low), daily volume, time of day, and tick volume, you can find the importance of each factor and estimate the slippage for any trade by applying the model:

$$\text{Actual slippage at time } T = a_0 + a_1 \times \text{volatility} + a_2 \times \text{daily volume} + a_3 \times \text{current activity at time } T + a_4 \times \text{size of}$$

By creating a spreadsheet of values for all trades, then estimate future slippage at any time T during order size. This approach was taken in 1992¹ for size to current market activity. The results, shown very modest for most markets. The far right column that is, there is only a 5% chance of having slip sugar, combining both entry and exit. Commission large “worst” loss in Treasury bills was confirmed

Price Level

Continuing volatility is most common in markets that are at abnormally high price levels. Bull markets are followed by bear markets, and the combination creates sustained activity. Prices that are volatile at low levels are most likely to be at the end of a decline and can be returning to previous, less volatile patterns. The agricultural markets, when carryover

Thomas V Greer, B. Wade Brorsen, and ShiMiin Liu, "Slippage Costs of a Large Technical Trader," Tecimical Analysis of Stocks & Commodities (January 1992).

TABLE 162 Slippage (Loss) for Stop Orders (Slippage in Dollars per Contract)

<i>Market</i>	<i>Average</i>	<i>Best</i>	<i>Wo</i>
World sugar	13.63	-11.20	200
Coffee	48.13	-22.50	168
Pork bellies	38.49	-12.00	168
Soybean meal	14.34	0.00	60
Heating oil	37.35	-17.50	109
Japanese yen	18.53	-12.50	112
Deutschemark	18.06	0.00	162
Treasury bills	62.86	0.00	700
Copper	25.70	-11.36	62
Platinum	77.92	-17.86	280
Gold	65.80	0.00	410

**Source: Thomas V. Greer, B. Wade Brorsen, and Shi-Miin Liu, "Slippage Costs of a commodities (January 1992).*

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stocks are increasing, show reduced volatility Many experts have theorized that the high interest rate yields seen in the 1980s, as well as the high precious metals prices, are a very unusual event not to be repeated often.

Some markets do not have a high or low price in the normal sense of a physical commodity; therefore, they do not contain volatility patterns directly proportional to price level. For example, foreign exchange markets have low volatility when they are at levels perceived as the fair value or equilibrium. Prices increase in volatility when they move either up or down from this level, because any change away from the norm is considered unstable.

Crude oil represents a different phenomenon because it is a controlled market. While currencies may become volatile as they move away from equilibrium, they win become quiet at a new price if that is perceived as reasonable by the market. This is not the case with oil, because the producing countries continue to drive prices back to their target levels by controlling the supply. Therefore, the farther prices decline from the producers' desired price, the more of a struggle exists between fair value and controlled price, resulting in higher volatility The dynamics of higher oil prices are similar to other physical commodities. The day trader must always seek opportunities in potential volatility

APPLICABILITY OF TRADING TECHNIQUES

Most traditional methods of technical analysis, in particular

trendfollowing systems, are not used for trading intervals of less than 3 days; however, the price fluctuations during these shorter periods are nearly all technical. An economic analysis of supply and demand cannot be relevant over such a short time span; that approach can only be used for establishing longerterm trading policy. Other than the immediate reactions to overnight cash market movement, anticipated daily price changes based on political events and weather have not been successfully measured., however, techniques used for day trading can be applied to slightly longer periods of a few days. The principles used in these time frames are very different, and the number of data points used in the calculations reflect on the final reliability. For example, a 3day daily moving average relies on only three data points for its decision of the direction of the trend; therefore, it will be very erratic.

Both day trading and shortterm trading are concerned with timing to improve entry and exit points. The most common way to accomplish this is by a simple form of pattern recognition based on values relevant to the short time frame. From the floor trader's viewpoint, only the most obvious recent key levels are important. Today's price movements are compared with today's opening price, high and low, yesterday's closing price, yesterday's high and low, last week's high and low, very memorable older support and resistance points, and finally, lifeofcontract high and low. When the same price satisfies more than one condition, there is greater confidence in the importance of that point.

The importance of noise is also very different for the day trader and the trend follower. Noise, the underlying erratic movement of prices, is not a significant issue for the position trader looking to follow interest rates to high levels over the next year. But it is very important for the day trader, because the trend component of price movement is very small over a 24hour period compared with the noise. This makes it impossible, using the ordinary trendfollowing tools, to decide whether a move up over 15 minutes will begin a trend or whether it is simply part of the more common market noise.

TimeofDay Patterns

Timeofday and shortterm patterns are combined in the most popular forms of day trading; the types of patterns have been discussed in Chapter 15. There are natural occurrences during the trading day that make certain times more important than others. The

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opening gap and the continuation of that direction usually take the first 15 to 20 minutes of the trading day, as does the reaction to the U.S. economic reports that are released at 7:30 A.M. in Chicago. After that, a price reversal occurs and a trading range is established, which lasts until the middle of the session. The midmorning period, which may marginally expand the initial trading range, tends to include low volume because many of the orders originating off the floor (called paper) are exhausted near the open; floor traders take this opportunity for a break, further reducing liquidity

Following midday, activity steadily increases and the existing daily

range is tested. It is common for most day traders to buy the bottom of the range and sell the top. A break of either support or resistance after midday is considered a major directional change; traders quickly shift to the direction of the breakout with the expectation of holding that position for the balance of the day. A more thorough analysis of time is shown in Figure 161. This chart, created by Walt Bressert, uses the important recent highs and lows and is very specific about relationships between the developing range, the previous day's range, and the time of day. Readers may want to compare Bressert's relationship with those found in Chapter 15. Intraday highs and lows that correspond to key levels found on charts such as channel support and resistance, and head and shoulders objectives are also likely to have increased importance.

Intraday versus Overnight Price Ranges

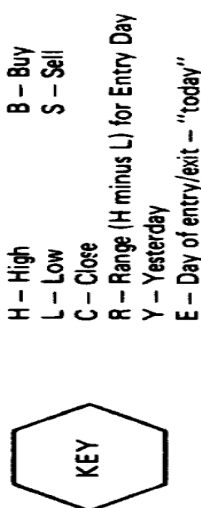
Holding a position overnight involves margin and, above all else, greater risk. It also increases the opportunity for larger profits. In moderately active markets, the opening gap, the difference between the prior close and the next open, can be one-third to one-half the size of the normal trading range. Markets that are traded in one time zone but reflect the business of a completely different geographic region, have larger systematic gap openings. For example, the Nikkei 225 is traded at the Chicago Mercantile Exchange, but the Nikkei reflects the value of the Japanese stock market. While the day session in Chicago is open from about 7:00 A.M. to 3:00 P.M. local time, the time in Japan is 10 hours earlier, 9:00 P.M. to 5:00 A.M., a period when there is no business activity in Asia. When Chicago opens, it must immediately reflect the price of the previous closing session in Japan; therefore, it gaps to that level. This same situation happens to a lesser degree for European currencies, which are actively traded on Chicago's IMM. When those markets open at 7:20 A.M., Europe is coming back from lunch and all local economic news has already been absorbed into the market.

In Table 163 and Figure 162 we see that the currencies and metals, representing markets actively traded 24 hours, have the largest overnight gaps. Viewing world markets only during the U.S. business hours can put a trader at a disadvantage and force him to deal with unpredictable, uncontrollable risks. This has prompted many traders to watch the markets through both day and night. Most computerized systems have no trouble continuing their calculation through various sessions.

Point and Figure for Short-Term Trading

Point and figure charting has been a primary tool of day traders for many years. Using the minimum price movement as the box size and a 3-box reversal, many traders will keep a continuous, although lengthy, chart of day-to-day price movement. Buy and sell signals can be taken in the standard manner, but day traders are most likely to use these charts for identifying countertrend support and resistance levels. Intraday point and figure, as well as moving averages, often show frequent changes of direction before a new buy or sell signal occurs, even when the minimum box size is used. Trend methods are best applied to short-term overnight positions in which the size of the move is much larger.

FIGURE 16-1 Intraday timing of market movement.



$H_E < H_Y$ - high of entry is lower than yesterday's high
 $H_E > H_Y$ - high of entry is higher than yesterday's high
 $R > C$ - range of entry day extends above yesterday's close
 $R < C$ - range of entry day extends below yesterday's close
 $L_E < L_Y$ - low of entry day is lower than yesterday's low
 $L_E > L_Y$ - low of entry day is higher than yesterday's low

Buy long or make profits from short position (Market must choose below previous day's low and below the open on entry day)									
OPEN ABOVE CLOSE					OPEN BELOW CLOSE				
35 min.					35 min.				
Open + Mid- before					Open + Mid- before				
Open 30 min. day close					Open 30 min. day close				
A	B	C	D	E	F	G	H		
1									
$H_E < H_Y$	H	L	C	D	E	F	G	H	
$L_E > L_Y$	H	L	C	D	E	F	G	H	
$R < C$	H	L	C	D	E	F	G	H	
2									
$H_E < H_Y$	H	L	C	D	E	F	G	H	
$L_E < L_Y$	H	L	C	D	E	F	G	H	
$R > C$	H	L	C	D	E	F	G	H	

Sell short or take profits from long position (Market must choose below previous day's low and below the open on entry day)									
OPEN ABOVE CLOSE					OPEN BELOW CLOSE				
35 min.					35 min.				
Open + Mid- before					Open + Mid- before				
Open 30 min. day close					Open 30 min. day close				
A	B	C	D	E	F	G	H		
7									
$H_E < H_Y$	H	L	C	D	E	F	G	H	
$L_E > L_Y$	H	L	C	D	E	F	G	H	
$R < C$	H	L	C	D	E	F	G	H	
8									
$H_E < H_Y$	H	L	C	D	E	F	G	H	
$L_E < L_Y$	H	L	C	D	E	F	G	H	
$R > C$	H	L	C	D	E	F	G	H	

TABLE 16-3 Percentage of Overnight Price Gap Compared with Subsequent Trading Range, for Selected U.S. Markets

<i>Market</i>	% Change Overnight	
	1985-1989	1990-
Cotton	29.6	27.0
Corn	26.3	26.0
Soybeans	25.5	23.0
Australian dollar	51.9	43.0
British pound	39.1	28.0
Canadian dollar	39.0	31.0
Deutschemark	37.9	30.0
Japanese yen	43.0	35.0
Swiss franc	38.4	25.0
Gold	28.7	31.0
High grade copper	na	30.0
Crude oil	32.4	20.0
Heating oil	33.8	29.0
S&P 500	19.3	16.0
NYSE Composite	22.0	19.0
Treasury bills	27.2	25.0
Treasury notes	26.6	13.0
Treasury bonds	22.6	11.0

Price reversals that occur during the day can be plotted using a smaller pointandfigure box size than is common for daily charting. The more frequent reversals due to the combination of more data and smaller box size will define the trend sooner or bring the protective stop closer. Remember, stoploss levels advance only when there are reversals. In this way, day traders' improvements are transparent to the pointandfigure users who work only with the daily high, low, and closing prices. In general, when there is a choice of plotting a pointandfigure trend continuation or

reversal, the reversal should be plotted. This allows the chart to reflect the reversal sooner and bring the stoploss closer both are an improvement over the standard rules.

Moving Averages

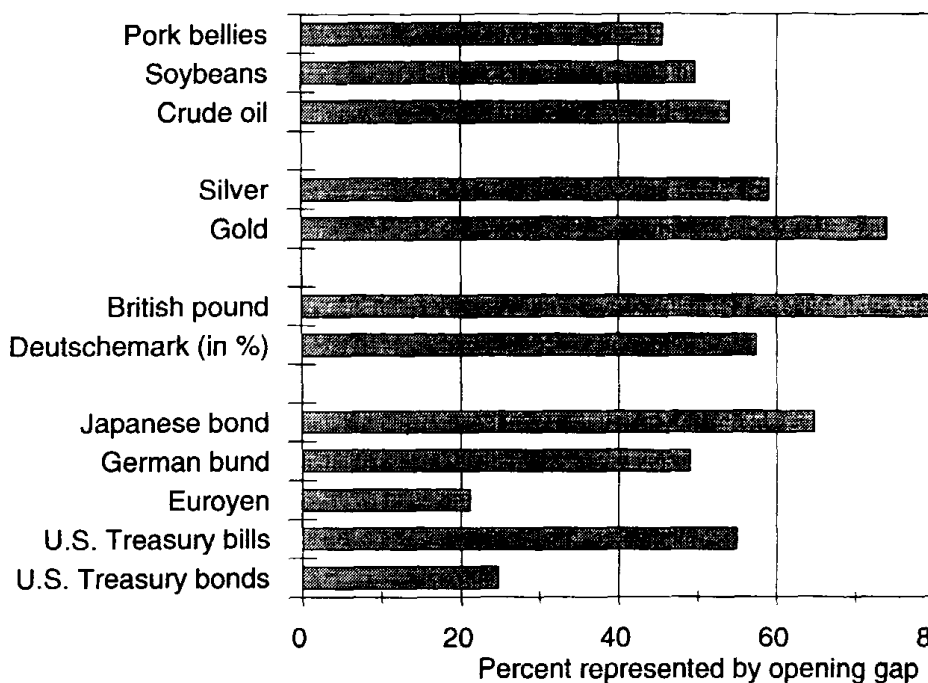
The intrinsic dependency on time makes a moving average less adaptable to day trading. To be used properly, a moving average must be recalculated at fixed intervals. Two philosophical questions must be answered with regard to intraday moving averages. Do trends exist in this short time interval, and does it make sense to apply a moving average to all intraday prices unevenly spaced with respect to time? In a previous section of this chapter, the conflict between noise and trends was discussed. Markets with a large noise component require more time to identify a trend, or a larger price move; therefore, it may not be possible to enter a trend trade and still have enough profit potential before the end of the trading session. It is likely that there will not be more than 25% of the daily range remaining after the trend has been identified, making the profit opportunity too small.

The versatility of computers allows all intraday prices to be used in a moving average rather than the traditional 5-minute bar; furthermore, you can create a price bar based on every 5 or 10 prices, regardless of time. In a liquid market, prices might be posted every

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FIGURE 162 Opening gap as a percentage of daily move.

Opening Gap as a Percent of Daily Move



few seconds even though volume may vary. For practical purposes, prices might be considered equally spaced. But consider an extreme example. The price of a less liquid market changes every 15 seconds during more active times, then quiets to 5minute intervals; at one time, there is a lull of 15 minutes followed by a jump in price. Is there a difference in the way we would interpret the following two patterns? is there a difference in the way a moving average would calculate the trend?

<i>Time A</i>	<i>Price</i>	<i>Time B</i>
10:00	5005	10:00
10:01	5010	10:05
10:02	5005	10:06
10:03	5015	10:16
10:04	5025	10:26
10:05	5020	10:28
10:06	5015	10:29
10:07	5025	10:44

Pattern A shows a gradual upward movement over equal time

intervals; pattern B shows slow rallies and fast drops. When interpreted by a trader, pattern B is often considered topicky; it is a market struggling to go higher with anxious sellers. Moving averages of pattern A, taken as shown, and pattern B, interpolated to equal intervals, will have the same trend direction at each point. There is not enough information to know which is best, but it is clear that the patterns can be interpreted differently.

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More on Choosing the Length of the Intraday Bar

While there is no right bar length, traders most often choose 5, 10, 15, 30minute. and 1hour periods to chart. Most of the commercial software packages require that the interval be evenly divided into 1 hour; therefore, a 6 1/2minute interval is not allowed. When using longer bars, such as 1 hour, it is important to consider the length of the last bar of the day. A 1hour bar will post its first price at the end of the first actual hour, rather than 1 hour after the open; the last bar will be the interval from the last whole hour to the close. In the case of oil, this may only be 10 minutes. When bars are uneven in this way, the price ranges and corresponding volume are no longer comparable with one another.

There is a difference in opinion between analysts over the choice of intraday intervals. One group prefers to pick a standard number because it conforms to the way others trade, for example, you can expect orders to flow more actively every hour. This approach may be particularly valuable if you plan to take the opposite position. The other group of traders are constantly seeking their own time interval, avoiding uneven order flow and price distortion caused by most other traders. if you are part of this group, you may choose your interval by dividing the total number of minutes in the trading session by a value that gives you equal length bars. You may also want to find a bar length, such as 21 minutes, that represents a Fibonacci number and comes close to dividing the day equally.

MARKET PATTERNS

A trade that lasts from 1 to 3 days can be improved if shortterm patterns or cycles can be found. For example, in a trending market there are outstanding weekly and weekend patterns. It is most common to find that the price movements from Thursday to Friday (close to close) are in the direction of the major trend and that the movement on Monday is a continuation of that trend. By Tuesday (or sometimes Wednesday), the strength of new buyers or sellers has faded, and the market reverses due to lack of activity and some profit taking. It often stays in this state through Wednesday or early Thursday when it again resumes the trend. In a sideways market, the Friday and Monday directions differ from the direction during the prior week and often differ from each other.

Support and Resistance

Support and resistance levels are important to the shortterm trader. if prices start to move higher, slow down, and finally reverse, it is natural to consider the top price as a resistance point. Prices are thought to have been stretched to their extreme at that level. Any subsequent attempt to approach the previous high price will be met with professional selling in anticipation of prices stopping again at the same point. In addition, it is common for the

same traders and others to place orders above the previous high prices to take new long positions or close out shorts in the event of a breakout.

This method, very popular among floor traders and active speculators, tends to create and emphasize the support and resistance price levels until they define a clear trading range. Within a 3day period, these ranges can be narrow and yet effectively contain price movement. During the life of the trading range, it will continue to narrow as the levels become clear to more traders and the anticipation of a reversal at those levels becomes imminent.

To take advantage of the smaller ranges caused in this manner, it is necessary to enter positions during the middle of a trading session, frequently holding that trade until the middle of the next session. An example using the Chicago Board of Trade December 75 Silver contract, during August 1975, will help to illustrate this. Prices on 4 consecutive days are seen in Table 164. The opening and closing prices for the first 3 days do not indicate

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TABLE 164 December 75 CBT Silver

	<i>Open</i>	<i>High</i>
August 21	500.50	505.00
22	501.00	504.00
25	501.00	594.50
26	502.50	504.00

any opportunity for trading. Prices were generally in the middle of the daily range. By using the high and low of the previous day, this situation can be traded either of two ways.

Thursday, August 21, forms a range of 505 to 493, closing near the center of the range. After the next open, buy just above 493 and sell just below 505 to be certain of entering and exiting the position. For protection, a stop can be entered at about 506 and 492 to reverse the position on a breakout. Had this procedure been followed, entering 29 (200 points) before the bounds of the range, Table 165 shows how trades would have been executed.

In each case, the entry was 200 points before the level at which prices had reversed on the prior day. The StopLoss order was placed to limit losses to a 100point penetration. Although this is an ideal situation, professional traders frequently use this method. It can be seen that the support levels did actually rise from 493.00 to 494.50, and then to 496.00. When support was penetrated, prices rapidly broke to new lows of 483.80, down to the permissible limit. Similarly, the resistance level remained intact going from 505.00 to 504.00, 504.50, and finally, 504.00. It is generally accepted that the resistance level represents a more volatile area that must be watched closely for false breakouts.

Support and resistance levels gain importance the more time they remain intact. The high and low of the prior day are not as significant as the weekly or the monthly range. Each can be traded using the same technique. The major support and resistance levels are contract highs and lows, which rarely allow breakouts with less than one attempt. Longerterm price objectives can be identified using a continuation chart. This chart plots only the nearest (spot) futures contract of a specific market to allow the location of support and resistance levels when the current contracts are in a new high or low area.

Before 1990 there were very few published day trading systems. The more recent ones have had the benefit of sophisticated computer programs and large historical databases. The following method precedes this era and remains unique and a valuable part of our literature.

TABLE 165 Trading December 75 Silver Using Support and Resistance

August 22	Sold at 503.00
	Closed-out short and bought at 495.00
August 25	Closed-out long and sold at 502.00
	Closed-out short and bought at 496.50
August 26	Closed-out long and sold at 502.00
	Closed-out short and bought at 498.00
	Closed-out long and sold at 495.00
	Open position
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The Taylor Trading Technique

In 1950, George Douglass Taylor published his book method of day trading, which he had been using for many years in both the stock and grain markets.' The method is based on the experience of discipline and timing, but is carefully set down and can be implemented in either a sophisticated or simplified state. The system is intrinsically cyclic, anticipating 3day movements in the grains. These 3 days can vary in pattern when they are within an uptrend or downtrend. Taylor's explanation of his method is thorough and includes many valuable thoughts for traders interested in working with the market fulltime. The summary and analysis presented here cannot replace a reading of the original material.

Taylor developed his approach to trading through experience and a belief that there is a basic rhythm in the market. The dominant pattern is seen to be a 3day repetition with occasional, although regular, intervals of 4 to 5day patterns. Taylor's cycles are based on continuous trading days without regard to weekends and holidays. The 3day cycle varies slightly if prices are in an uptrend or downtrend. The uptrend is defined as having higher tops and bottoms over some selected time period such as a week, month, or season. A downtrend is the reverse. During an uptrend the

following sequence can be expected:

1. A buying day objective, where prices stop declining and a purchase can be made before a rally begins
2. A selling day objective, at which the long position is closed out
3. A short sale day objective, where prices meet resistance and can be sold prior to a reversal.

Following the third day, after a short position is entered, the cycle begins again with a buying day objective. Because an uptrend is identified, Taylor has given extra latitude to the long position with part of the day between the liquidation of the long (2), and entering a new short (3) reserved to allow the upward momentum to exhaust itself. Downtrends are the opposite, expecting some added time for the downward move to finish before the rally begins.

The actual objectives are extremely shortterm support and resistance levels, usually only the prior day's high and low prices or occasionally the high and low of the 3day cycle, which may be the same prices. On a buying day, the objective is a test or penetration of the prior day's low price, but only if it occurs first, before a test of the prior highs. Taylor's method is then a shortterm countertrend technique, which looks for prices to reverse direction continuously. His belief was that speculation caused these erratic, sometimes large, cyclic variations above and below the longterm trend.

Taylor placed great emphasis on the order of occurrence of the high and low on each day. To buy, the low must occur first. If this is a buying day in an uptrend, a long position is entered after any lower opening whether or not the prior low is reached. Taylor reasoned that because an uptrend is generally stronger toward the close, the first opportunity must be taken on a buying day. However, if a high occurs first and prices then decline nearing the lows toward the end of the trading day, no long position is entered. This pattern indicates a lower open the following day, which will provide a better opportunity to buy. During a downtrend, the violations of the lows, or penetrations toward the close, are more common. By waiting until the next day to purchase, the 3day cycle is shifted to favor the short sale.

Consider the same problems with regard to closing out a long and entering a new short during an uptrend. If on the same day that the long was entered prices rallied sharply, touching or penetrating prior highs, a higher opening would be expected the next day, at which time the long position would be closed out. Because of the uptrend, a small

'The Taylor Trading Technique, by George Douglass Taylor (1950) (reprinted by Traders Press, PO. Box 6206, Greenville, SC 29606, in 1994).

setback and another test of the highs might be expected. It would then require another day to ensure that the strength was exhausted. If the highs of the selling day were tested on the open of the short sate day, a new short would be entered immediately. If the short sale day opened lower and finished higher, no position would be taken.

Shorter reactions to price moves are expected when a long position is entered on a buy day, or on the next open, when a downtrend exists. If

prices rally sharply on the same day, the position is closed out at a profit. This is important to remember, because trading against the trend does not offer the latitude of waiting for the best moment; time is working against the position.

Taylor called this his book method because he recorded all the information necessary for trading in a small 3" x 5" spiral notebook that he carried. The organization of the book is shown in Table 166, an example that uses the November 75 soybean contract. Of course, in Taylor's book, there would be only 1 month per page due to its size. The first five columns contain the date and day, followed by the open, high, low, and closing prices. The

TABLE 166 November 1975 Soybeans

1975		Open	High	Low	Close	D
March						
M	10	540	x542	535	540½	
T	11	435	560¼	x535	560¼	7
W	12	560	x572	552	571½	
H	13	568	x577	559	560½	
F	14	553	559	✓549	549½	28
M	17	548	✓560	548	548	
T	18	555	x558	538	538½	
W	19	530	546	x529	545¼	29
H	20	543	✓555	540	547½	
F	21	547½	✓567½	547½	567½	
M	24	573	581	✓561	573	6½
T	25	573	x575	564	574	
W	26	577	✓594	574	594	
H	27	587	590	✓579	585	15
M	31	592	✓603½	589	595½	24½
April						
T	1	599	x599	584	591½	
W	2	589	591½	✓575	575¼	24
H	3	570	✓573	565	566¾	
F	4	570	✓578	567	576¾	
M	7	577	577	✓562	565¾	16
T	8	566	✓579½	563	568¼	
W	9	565	✓574	561¼	573½	
H	10	571	575	✓556	561¾	18
F	11	560	x564½	558	563½	
M	14	561	x568	555½	561¼	
T	15	565	569¼	✓560½	563½	7½
W	16	562	x566	553	559¼	
H	17	560	✓565	558	563½	
F	18	563	563	✓557	559	8

first 10 days are used to determine where the cycle begins. Scanning the daily lows, circle the lowest of the first 10 days, in this case March 19. Then work backward and forward, circling every third low price. These are buying days. The sequences of two inbetween days are circled in the high column and indicate the selling day and the short sale day, respectively. This example is especially simple because it assumes a consistent uptrend and shows no variation from the 3day cycle.

To judge the opportunities for buying and selling, the next

columns, marked D and F, indicate the number of points in the decline from the short sale to the buying day, and the number of points in the rally from the buying day to the selling day. In both columns, the differences are taken using the highs and lows only. These values represent the maximum number of points that could have been made in those trades, provided the highs and lows occurred in the proper order. An "X" or a .P' in the circle next to the high or low means that the opportunity to buy or sell occurred first (if an X) or last (if a v). In the case of the first, the trade would have been entered that day and in the other case, Taylor would have waited.

The next two columns, BH and BU, show the adversity and opportunity of that day's prices to the buying objective. BH means a buying day high and is entered with the number of points that the day traded above the prior day's high (the short sale day); BU shows the opportunity to buy under, by recording the number of points by which the day sold under the low of the prior day the area to buy if the low occurred first. if neither situation occurred, zeros were entered.

A wide column on the right is used to indicate the net weekly change in direction by taking the difference between the prior Friday's closing price and the current Friday's price. This should be used to compare with the trading performance.

By observing columns D and R in Table 166, it can be seen that there was ample opportunity for profits on both the long positions and short sales, with only one case of a zero entry on April 3. The trades that would have been entered or liquidated can be approximated using the BH and BU columns and the x and wol notations. For consistency, it might be assumed that the w/ indicates that a position was taken on the next open. in either case, the results would have been good.

Taylor's daily method requires care in monitoring the market, which only a fulltime trader can provide. The order of the highs and lows must be observed, as well as whether the new low is going to penetrate or fail to penetrate the prior lows. The trades must be timed carefully for maximum profit. In addition, it would be helpful to combine this method with a good trend identification technique as well as observe seasonal patterns to improve the choice of the overriding market direction.

For those who cannot watch the market constantly, Taylor offers a rigid 3Day Trading Method, which is a modification of his overall daily method. The cycles remain the same, but the buying and selling objectives are entered into the market in advance. This method is expected to work on balance, as are other welldefined systems. What is primarily lost by this approach is the order of occurrence of the highs and lows; otherwise, the concept of the system remains intact.

It is interesting that this technique profits from penetration of support and resistance levels. Most other methods consider a breakout of prior highs and lows as a major trend change indication, but Taylor views it as a better opportunity to do the opposite. It is one of the few examples of such an approach and could only succeed in the short term, where the behavioral aspects of trading are dominant.

Intraday Breakout Systems

As discussed earlier in this chapter, there are unique intraday price patterns caused by an uneven distribution of volume throughout the day. By far, the most popular systematic

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approach to day trading is the Nday breakout applied to intraday data; this transforms it into the Nbar breakout. Entry and exit signals occur during the trading session instead of only at the close; in addition, there may be more than one buy or sell during the day if prices have wide swings.

A variation of this technique intended for intraday data is the opening range breakout, which gives the underlying entry and exit signals based on how far prices move from the open of the day. The trader is then buying when prices move up from the open by, for example, 8 ticks in bonds, in the same manner as a trend follower. If prices then decline to 8 ticks below the open, the long position would be reversed to a short. This approach uses the opening price as the pivot point for the day, claiming that price direction, relative to that point, is important. Tests exited all trades on the close of the day.

it is also reasonable to use the close of the previous day as the pivot point. Most traders watch today's prices to see if they are higher or lower than the prior close, which connects today's price patterns to the previous day. In its basic form, the opening range breakout treats one day as independent to previous price movements. This seems unnecessarily restrictive. Crabel, in his extensive study of intraday patterns, has found that combinations of inside days, low volatility, bull and bear hooks, and other patterns that precede the current day, all contribute to a selection process that improves trading. Table 167 shows a comparison of an opening range breakout with and without a preceding inside day.¹ The improvement due to selection is significant.

if you consider that intraday trading may give one new signal each day, any method that helps select the better trades is welcome. The intraday trading profile of many small profits and losses allows you to be more selective without fear of missing the one big trade of the year, which is a problem typical of a longterm trendfollowing system. Skipping as

¹ See Toby Crabel, *Day Trading With Short Term Price Patterns and Opening Range Breakout* (Traders Press, Greenville, SC 29603).

² Toby Crabel, "Opening Range Breakout, Part 4," *Technical Analysis of Stocks & Commodities* (February 1989).

TABLE 167 Opening Range Breakout, % Profitable Trades*

		<i>Any Day (%)</i>
Bonds	Open plus 16 ticks	60
	Open plus 8 ticks	55
	Open minus 8 ticks	56
	Open minus 16 ticks	56
S&P 500	Open plus 160 points	68
	Open plus 80 points	55
	Open minus 80 points	49
	Open minus 160 points	49
Soybeans	Open plus 10 cents	60
	Open plus 5 cents	56
	Open minus 5 cents	58
	Open minus 10 cents	63
Cattle	Open plus 50 points	65
	Open plus 25 points	58
	Open minus 25 points	58
	Open minus 50 points	63

**Source: Toby Crabel.*

FIGURE 163 (a) Omega TradeStation code for firsthour breakout system.
(b) Omega TradeStation code for firsthour breakout indicator.

{ System: 1st hour Breakout (adapted from M. McNutt, 1994) }

[10] MaxBarsBack
[*] Generate Realtime Orders
[*] Do not allow multiple entries in the same direction

System uses ten minute bars of S&P futures for data 1 and 60 minute bars for data 2 [daily data is held in data 3] }

vars: SesslFirstBarDate(9, data2, SesslFirstBarHigh(0, data2),
SesslFirstBarLow(0, data2), avedayrange(0,data3);
input: RanLn(10);

avedayrange = @average(high of data3 - low of data3), RanLn) of data3;

if (time of data2 = SesslFirstBarTime of data2) or
(date of data2 > date[1] of data2) then begin
SesslFirstBarDate = Date of data2;
SesslFirstBarHigh = high of data2;
SesslFirstBarLow = Low of data2;
end;

If (SesslFirstBarDate = Date of data2) and
(time of data2 < SesslEndTime of data2) then begin
if close[1] < SesslFirstBarHigh then buy at
SesslFirstBarHigh + 20 point stop;
if close[1] > SesslFirstBarLow then sell at
SesslFirstBarLow - 20 point stop;
end;

if low <= SesslFirstBarHigh - avedayrange then exitshort at market;
if high >= SesslFirstBarLow[1] + avedayrange then exitlong at market;

(a)

{Indicator: 1st hour Breakout (adapted from M. McNutt, 1994) }

vars: SesslFirstBarDate(9, data2, SesslFirstBarHigh(0, data2),
SesslFirstBarLow(0, data2), avedayrange(0,data3);

avedayrange = @average(high of data3 - low of data3, 10) of data3;

if (time of data2 = SesslFirstBarTime of data2) or
(Date of data2 > date[1] of data2) then begin
SesslFirstBarDate = date of data2;
SesslFirstBarHigh = high of data2;
SesslFirstBarLow = low of data2;
end;

if (SesslFirstBarDate = date of data2) and
(Time of data2 < SesslEndTime of data2) then begin
Plot1(SesslFirstBarHigh, "1st Buy");
Plot2(SesslFirstBarLow, "1st Sell");
Plot3(SesslFirstBarLow + avedayrange, "Buy stop");
Plot4(SesslFirstBarHigh - avedayrange, "Sell stop");
end;

(b)

be able to stand aside and start again without much concern about continuity

Breakout Ranges Based on Time

instead of a breakout that occurs when prices move a fixed number of points away from the opening price, you can establish an opening range based on the first 60 minutes of trading.¹ After this time, a new high or low would be a signal to enter a long or short position. This is a tradeoff between avoiding the erratic movements of early trading and missing the beginning of a price move to start early and continue in the same direction.

Combined with the firsthour breakout is a calculation of the day's trading range to be used for reversing your position or taking profits. The projected range high is calculated as the average daily range added to today's low price after the first hour of trading; the low is that same range calculation subtracted from the high of the first hour. The Omega Easy Language code for this system involves the use of multiple time frame data and can be found in Figure 163a; an indicator that shows the signal on a chart page is given in Figure 163b. In the practical application of this method, the firsthour range must be penetrated by at least 20 points for the S&P. If the firsthour range is nearly as large as the average 10day range (used for the exit targets), use the anticipated high and low for buy and sell signals, rather than a breakout of the firsthour range. Other risk controls, such as a trailing stop (in addition to a reversal if the opposite signal is given) and a fixed stop, are also recommended.